REMARKS/ARGUMENTS

Applicant thanks the Examiner for her careful attention to this application. Claims 1-31 and 63-72 are presently pending, as Applicants have formally withdrawn claims 32-62 in response to the Examiner's restriction requirement issued February 28, 2003, and have added claims 63-72. Applicant has amended claims 1, 6, 9-11, 17, 21, 27 and 31 as set forth herein, and considers all of the pending claims in condition for allowance.

Applicant has taken note of the Examiner's statement that legible copies have not been provided for certain references submitted with the Information Disclosure Statement filed May 10, 2003. Applicant is resubmitting herewith legible copies of the references, along with a clean copy of Form PTO/SB/08A/B from the previously filed IDS which lists the portion of references that were not considered by the Examiner. Applicant respectfully requests reconsideration, reexamination and allowance of the application.

The Examiner has objected to claims 6, 9-11 and 17 based on informalities. Applicant has corrected the informalities, as well as a typographical error in claim 27, and therefore respectfully requests that the objections be withdrawn.

The Examiner has rejected claims 1-31 under 35 U.S.C. Section 103(a) as allegedly being unpatentable over Ditto, U.S. Patent 6,270,352 in view of Boon, U.S. Patent 6,022,221. Applicant believes that the rejections should be withdrawn.

In one embodiment, as set forth in claim 1, Applicant's invention is directed to a learning item sequencing system for optimizing a student's learning speed. The system includes a

problem database containing a plurality of learning items, in which a learning item is presented on each learning trial; a trial record database for storing response data regarding the student's response to each learning item, in which the response data includes data relating to speed and accuracy; and software for implementing a trial loop, in which the learning trials are presented to the student and response data is collected. The system further includes a novel sequencing algorithm, in which the algorithm sequences the learning items to be presented by associating with a learning item a priority score as a function of the response data collected from prior learning trials and restricts one or more learning items from being presented in at least one learning trial based upon the priority score associated with the learning item. Independent claim 31 discloses similar limitations in the context of a method claim.

Independent claim 21 recites, among other limitations, a trial record database for storing a record containing response data regarding the student's response to each learning item, the response data collected for each learning item including the student's accuracy in answering each learning item and the student's response speed for each correctly answered learning item. Claim 21 further discloses a sequencing algorithm based on priority scores, in which the priority scores are determined based on the claimed response data.

The claimed inventions are not disclosed or suggested by the relied-upon references. As stated by the examiner, Ditto does not disclose the trial record database recited in claims 1, 21 and 31. Ditto also does not disclose the claimed sequencing

-21-

algorithm with the attributes set forth in claims 1 and 31. Ditto discloses a method known as "biased random selection," in which the system assigns particular performance numbers to learning items for the purposes of biasing the probability that a particular item will be selected in a subsequent trial. In Ditto's system, any item may be selected for presentation on any trial, and "a selected problem does not necessarily mean that the problem had the highest probability of being selected when it was selected." Ditto, col. 13, lines 31-45; FIG. 1. Thus, Ditto's system may present the same item multiple times in the same trial or even in a row regardless of whether the item has a low performance number. Ditto does not assign priority scores based upon response data including date relating to speed and accuracy, nor does it restrict one or more learning items from being presented in at least one learning trial based upon the priority score associated with the learning item. Ditto, therefore, is fundamentally different than Applicant's claimed invention, which uses a deterministic approach that allows for reliable optimization of learning and satisfaction of important problem retirement criteria.

Boon also fails to disclose the claimed inventions. Boon discloses information relating to "level of retention," which refers to the length of time since the last correct answer on a problem. Col. 2, line 66 – col. 3, line 1; col. 4, ll. 31-37; col. 4 lines 52 – col. 5, line 17. Boon does not appear to disclose response data relating to speed and accuracy, as set forth in claims 1, 21 and 31. Further, Boon's system prescribes preset review intervals for a given problem based on elapsed

-22-

time, a scheme that is directed to achieving Boon's stated objective of providing "a bridge between short and long term memory." E.g., col. 2, lines 32-34. The stated objective of Boon, based upon fixed, preset intervals, appears fundamentally incompatible with Ditto's use of biased random selection, in which one can never be sure of what appears next. Accordingly, Applicant respectfully submits that it would not have been obvious to combine the teachings of Ditto and Boon to achieve the claimed inventions as set forth in claims 1, 21 and 31, as elements of the claims are not disclosed in either of the references, nor is there motivation to combine the references. Accordingly, the rejections of independent claims 1, 21 and 31 should be withdrawn.

Claims 2-20 and 22-30 are also considered in condition for allowance, as they depend upon one of allowable independent claims 1, 21 or 31.

Newly added claims 63-72 also depend upon independent claims 1, 21 or 31. More particularly, claims 63 and 66, dependent upon claims 1 and 21 respectively, recite that the claimed sequencing algorithm also sequences categories of learning items. Claims 64 and 67, also dependent on claims 1 and 21 respectively, recite that the learning items comprise categories of learning items. Claims 65 and 68, dependent on claims 1 and 21 respectively, illustrate another advantageous feature of an embodiment of the present invention, in which the sequencing algorithm further includes one or more parameters selected from the group consisting of relative importance of speed and accuracy, minimum trials separating learning item

recurrence, and retirement criteria, in which one or more parameters may be adjusted to suit different learning material, tasks or individuals. Claims 69-72 depend upon method claim 31 and add the limitations set forth in the claims. As the new claims depend upon claims that are considered allowable, Applicant respectfully requests that Examiner also allow the newly added claims.

Based on the foregoing, Applicant submits that claims 1-31 and 63-72 are in condition for allowance. Applicant therefore respectfully requests early issuance of a Notice of Allowance.

Respectfully submitted,

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-24-